The Citrus Industry

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JACKSONVILLE, FLORIDA

NEW COMMISSIONERS NAMED

Acting upon the recommendation of a special committee of prominent citrus growers, Governor Caldwell has appointed five members of the Florida Citrus Commission to succeed the members whose terms expired on June 1. The members appointed by the Governor will serve for two-year terms. Those named are: C. C. Commander, Tampa, succeeding R. M. Clewis; Lat Maxcy, Frostproof, succeeding Fred W. Davis; Rollie Tillman, Lake Wales, suceeding Harry L. Askew; James Taylor, Ocala, succeeding W. E. Bishop; J. J. Schumann, Vero Beach, reappointed.

The Florida Citrus Commission is one of the most important bodies in the state—so far as citrus growers are concerned, it is the most important. It is well for the industry that men of such prominence and well known ability have been named to join the six hold-over members whose terms expire on June 1. 1946. These members are L. S. Andrews, Jr., Cocoa; Jeff Flake, Wauchula; A. S. Herlong, Sr., Leesburg; M. H. McNutt, Orlando; Charles A. Stewart, Auburndale, and Wilber T. Tilden, Orlando.

As now constituted, the Commission is composed of some of the leading growers and shippers of the state, men who have been prominent in the industry for years and who enjoy the confidence of their fellow growers. Under their direction, the Commission may be expected to continue the good work which has been inaugurated by the Commission in the past and to go still further in promoting the interests of the growers and the industry as a whole. Governor Caldwell is to be congratulated on the wisdom of his appointments.

GROWERS SEEK CEILING ADJUSTMENT

Due to the extensive loss of fruit caused by the prolonged and serious drouth, the OPA fresh fruit and processing committees will ask the Office of Price Administration to adjust ceiling prices on the 1945-46 crop of citrus fruits.

OPA is asked to put the new ceiling prices into effect on September 1 in order to cover first shipments on the new season crop. Prices now in effect, which include an allowance for hurricane loss, will automatically revert to the prices at the end of the 1943-44 season unless an adjustment for drouth loss is authorized.

Just what the actual loss from droppage caused by the prolonged drouth may be can only be surmised. During the six months beginning November 1, 1944 and ending April 30. 1945, less than one-half of the seasonal rainfall was recorded. In some citrus areas the rainfall was not more than one-fourth of the seasonal average. The drouth, too, extended throughout May and in most localities well into June, coming too late to have material effect upon the so-called "June bloom."

It is hoped that a special survey of the new crop may be made by the Department of Agriculture at an early date in order that any adjustment of ceiling prices may be made before the opening of the shipping season. The first crop estimate is issued normally on October 10 each year and a special survey will be needed if OPA is to act before the start of the shipping season early in September. Florida citrus interests are hopeful that steps will be taken to adjust prices to present conditions.

PROMINENT CITRUS EXPERT PASSES

In the recent death of John H. Jeffries the citrus interests of Florida lost a prominent and valued member. Mr. Jeffries had been connected with the Florida Experiment Station for more than thirty years.

At the Lake Alfred Citrus Experiment Station he conducted numerous interesting and important experiments in citrus breeding, distributed budwood throughout Florida and in a number of foreign countries, and supervised the cultivation of experimental groves

It was Mr. Jeffries who set up the Citrus Experiment Station at Lake Alfred, beginning on October 1, 1920. He remained as its superintendent until 1940, when he was made assistant in citrus breeding. He retired from active service on December 31, 1941.

A native of England, he came to America at the age of seventeen and became an American citizen at Lake City in 1898. He was 74 years old at the time of his death. His passing is deeply regretted in all citrus circles.

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JACKSONVILLE, FLORIDA

Citrus Processing Tests . . . Underway

Answers to many perplexing problems which have confronted the Florida citrus canning industry since the first grapefruit juice was processed by the late C. C. "Pop" Street in 1914, are now being sought by a special research staff assigned to the job by Continental Can Co.

Working with the completely equipped "pilot" plant of Citrus Concentrates, Inc., Dunedin, the scientists are testing four known and currently used methods of processing orange juice and have also made some test packs of a brand new product— tangerine juice, heretofore regarded as impossible to process because of many unstable factors.

B. C. Skinner, head of the concentrates company, has invited all of the Florida citrus industry, including growers, shippers, packers and processors to make suggestions towards future research.

"While the work is being done in our 'pilot' plant, the end result of the tests and experiments will be available to the whole citrus canning industry as a part of the service of the can company," Skinner said, pointing out that his organization had the only available and fully equipped 'pilot' plant in the state. It is used in the company's own research work and runs the gamut from different types of extractors up to sealing and sterilization units.

This is the first time that scientists have been able to make simultaneous tests of four methods of canning, using juice from one batch, he pointed out. By having all methods available the important factor of difference in juice from various batches and crops is eliminated.

J. J. R. Bristow, research director for the Dunedin firm, pointed out that the first processed Florida citrus juice was cooked in an open kettle on an improvised stove by the late C. C. "Pop" Street, hailed as the father of citrus canning in Florida.

The next step was the open vat cooker, heated by steam, adapted from the vegetable canning industry. Then along in 1929 so-called "flash" pasteurization, adapted from the milk industry, was introduced.

In 1945 the high-temperature turbulent flow method of sterilization was first used and the latest development is an improvement of this last idea.

The end result hoped for a general improvement in the flavor of canned orange juice, a better keeping quality and the retention of all its health-giving properties, including color.

The research staff on the job includes a bacteriologist and other research men. Each of these men is a specialist in his own line and is making independent studies.

The large quantities of juice, under absolute identity control, including several hundred specimens, will be stored for varying periods of time at different temperatures.

Indications of the end result

(Continued on page 12)

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Grapefruit Quality Problems Studied...

A study to determine the various factors that influence the eating quality and nutritional value of grapefruit recently completed by the U. S. Department of Agriculture affords a better basis for establishing maturity standards than has heretofore been available. Under existing standards some good grapefruit has been barred from the fresh fruit market and some that has been passed has not been satisfactory to consumers.

The natural changes in the fruit as it ripens on the tree are the result of changes in physical and chemical properties which for the most part cease when the fruit is harvested. In the case of grapefruit it must be of good quality at the time of harvest and a suitable standard must be used to guard maturity. In this respect grapefruit and other citrus fruits differ from peaches, apples, and some other fruits which will ripen and improve in quality after harvest.

The chief trouble in getting good grapefruit has been in the early part of the season when the fruit barely meets the legal established requirements for maturity in Florida. These are based on the ratio of the content of soluble solids (mostly sugars) to the acid in the fruit, together with a certain juice volume. The same standard applies to all types and varieties of grapefruit. The results of the study by the Bureau of Plant Industry, Soils, and Agricultural Engineering, however, show that in order to guarantee acceptable grapefruit to the consumer a dual standard is needed, one for varieties like the Marsh, which are seedless, and another for the seedy kinds like the Duncan.

As a basis for discussion of these problems and for possible better reults in the marketing of grapefruit in the various regions where the crop is produced, horticulturists carried on extensive studies of the seedless and seedy types in the Florida area and a report has just been printed. For four years periodic analyses were made of more than 15,000 individual fruits. These analyses were begun before the fruit was edible and continued as long as any would hang onto the tree. Different varieties of these types, grown on different rootstocks and on different soils, were used and also fruits grown under different cultural practices.

The report has applications for growers and handlers of grapefruit in Texas, Arizona, and California as well as in Florida. It is published as Technical Bulletin 886.

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The Citrus Outlook . . . Long and Short Term Estimates

Florida citrus growers, in common with citrus growers everywhere, are casting a weather eye to the future, wondering just what the situation may be next year—and in the years to come .

Florida had a heavy early bloom this season, but the unprecedented drought of the spring and early summer has caused an excessive droppage of fruit, while the hoped for "June" bloom appears at this writing to be in the discard. That the crop now on the trees will be far short of last season, which was cut short by the losses in the hurricane, is the view of men well qualified to forecast the probable yield.

Citrus leaders in Florida and Texas are agreed that growers may anticipate satisfactory prices for this season's crop unless untoward conditions should develop later in the year. What may be expected in future years is something else. It is well, therefore, to ponder what recognized leaders have to say of prespects, near and remote. Of course these leaders may be wrong, but a study of their conclusions is well worthwhile.

Here is what C. C. Commander, general manager of the Florida Citrus Exchange, had to say about the future outlook in his annual report to his directors. His is largely a long view:

The Long View

Florida had a heavy, early bloom this spring but the drought has destroyed all prospect of a heavy crop next season. The loss of bloom and new fruit has been so great, particularly in unirrigated groves, that it now appears Florida will have less fruit in 1945-46 than was marketed this season. A late bloom may improve crop prospects but the records show that heavy crops usually do not follow hurricanes.

There will be fewer apples but more bananas and other fruits to compete with citrus next season. There will be unemployment in some sections but, on the whole, consumer buying power is expected to continue at a high level. Government purchases of citrus fruits will continue too, but may be smaller than this season. The sudden end of the war with Japan would seriously affect the nation's economy and could change the entire outlook.

The greatest problem in the distribution of Florida citrus crops next season may be transportation. The transfer of armed forces from Europe to the Pacific will place n additional heavy load on the overburdened railroads. If the railroads do not get more motive power and cars there will be longer delays in the delivery of fruit and greater congestion in terminal markets. There is little prospect that boats for coastwise service, or more motor trucks, will be available for at least another year.

Period of Readjustment

Florida growers should be able to market their fruit at satisfactory prices next season. The outlook for later years is more uncertain. The citrus industry, like most other farming activities, faces a period of readjustment. When the Pacific fighting ends we must find markets for the increase in our production during the war years which government agencies have taken. This problem is greater in Florida than in either Texas or California because our production has increased more.

In 1940-41, before our entry into the war, Florida produced 56,000,000 boxes of fruit. It had a crop of 92,000,000 boxes on the trees before the October hurricane. Much of this increase has been taken by the government, and it is for that part of our production that we must develop new markets after the war. Production of winter oranges in California has increased none at all during the war years, and grapefruit production in Texas has increased less than in Florida. It will be up to Florida, therefore, to develop a greater post-war civilian

demand.

In recent years there has been little increase in the sale of fresh oranges or grapefruit. It now appears that canned citrus juices are approaching the peak of present demand. Florida canning plants could pack 60,000,000 cases of canned citrus juices a year, but they have never sold more than 20,000,000 cases to the civilian trade in any year. Building more canning plants will not solve future production problems unless sales of canned products can be increased. There is urgent need for market research to develop ways to sell more canned products, as well as the newer processed products like concentrates and crystals.

New Citrus Plantings

The production of Florida fruit will probably increase in the next five years or more at a rate of about 10,000,000 boxes a year, or at about the same rate as in the last five years. Plantings of new groves continue as fast as nurseries can supply the trees. Many of the additional 50,000 acres of groves set out in the last few years were planted by growers taking advantage of Treasury Department regulations which permit them to charge most of the cost of such plantings to the expense of established groves. If these plantings continue, the effect will be to greatly depreciate the value of all citrus properties and reduce the taxes which the government gets from citrus growers.

The marketing of future citrus crops will be affected by the competition of cheap foods. Agricultural economists say that the present United States production of farm crops must be reduced about 35 percent after the war — that there can be supported on the farms of the country after the war only about 15 percent of the population, compared with the 21.6 percent now living on farms. Even if prices of a long list of farm crops (not including citrus) are supported by the government at 90 percent level represents a reduction of about 30 percent from present prices. It looks as if the post-war readjustment of American agriculture will be severe; it may, for a while at least, seriously affect the marketing of citrus fruits.

Florida citrus growers may never again realize the prices they have enjoyed for fruit the last few years. With the many uncertainties facing the industry, every cost of production, handling and distribution should be kept at a minimum. And more attention should be given to new citrus products, new distribution methods—to all ways to increase fruit sales. The industry's problems in the years ahead will be of a magnitude that cannot be solved easily.

The Near View

Then here is the near view as expressed by E. W. Linnard, writing of the situation as it appears from a Texas viewpoint:

Usually at the end of one successful shipping season we hear very gloomy pictures painted for the following year. Citrus salesmen are as pessimistic as football coaches before an important game.

The general idea seems to be that if we do not get our hopes too high we will not be so disappointed if the breaks in the game go against us.

Last week we mentioned that the prospects were for a light crop of grapefruit next season in Florida. California competes with us in the orange deal, but we are in strong position here also.

Huge Crop of Small Oranges

California is up against an interesting problem in marketing her Valencia crop. The trees are carrying an unusually large number of oranges, but they are so small they will have a real problem in getting the housewife to accept them.

Now when everyone has plenty of money they want large sizes. Selling by the pound has made the large size look unusally desirable. Small sizes were in demand when money was scarce, and the housewife was looking for bargains, but today she is looking for something that is fancy.

The California citrus men are on their toes as usual, and they already have had some concessions from the OPA that should tend to keep their market at or near ceiling prices.

The OPA has agreed that if for a period of approximtely 10 days the average auction prices drop substantially below ceiling, the OPA will suspend price ceilings at all levels.

This will allow the larger sizes to establish a natural differential, and by rising above the normal ceiling, they will tend to pull the average price up to higher levels.

Larger Valencia Crop

The California Valencia trees apparently have heard something about the food shortage that is threatening the nation for the next few years, as they set about twice as many fruit per tree as is normal.

The trees were not equal to the job, however, of sizing up this tremendous crop, and the fruit is the smallest in history.

The Valencia crop that is now beginning to move to the markets is 50 per cent greater than the 10-year average of 1933-42, and 20 per cent larger than either of the preceeding crops.

Last year's estimate of California's Valencia crop was approximately 30,000,000 boxes; this year they have 36,000,000 boxes to move, and they are the size that the trade objects to.

Central California has no problem, as their crop is 1,000 cars less than last year, and their oranges are normal size. But Southern California has so many oranges of walnut size that they believe that one-third must go into by-products.

61 Per Cent Small Sizes

Official estimates show that 61 per cent of Southern California's oranges are of the 288s and smaller, and 20 per cent, are 292s and smaller, which is much smaller than anything we think of shipping from Texas.

The entire Southern crop is about 75,000 cars, and 15,000 cars are of this "pee-wee" sige. What an opening for some good sized oranges from Texas when the next shipping season opens!

Some of the fruit is so small that it probably cannot be reamed out for juice unless some enterprising canner can devise some special equipment for this purpose.

In the past years the Texas produce men have told us they have lost more money on the small sizes from California than they could make up on the larger sizes.

Our fruit this summer seems to be large at the present time. Many have spoken to us about the unusual sizes on their grapefruit trees. Our early oranges will need pushing for size in every manner possible.

An ample supply of moisture is the chief factor in pushing the growth of our fruit.

And the early part of the growing season is the most favorable to crowd the fruit for a possible growth. During the hot summer months there is little we can do,

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A Progress Report On Citrus Tree Decline

By L. J. KLOTZ
In California Citrograph

(Florida citrus growers were much interested in the report of Dr. A. F. Camp on his inspection of California citrus trees affected by the strange disease known as "quick decline" which was published in the last issue of The Citrus Industry. They will be interested in knowing what California growers and scientists are doing to establish the cause and find a remedy for the disease. This article by Mr. Klotz sheds some new light on the subject.)—Editor's Note.

Let me say at the outset that the finest kind of cooperation has been given this work by the gentlemen of Limoneria Company and Teague-McKevill, Rancho Sespe, and the Santa Paula Lemon Company. In the actual planning and getting experiments under way, we are also much indebted to Mr. Foote, Mr. Bowker, Mr. Lombard, Mr. Forbes, and others.

It is generally agreed that the most important primary symptoms in decline are the injuries to and destruction of feeder roots and the failure of the root system to generate new feeders rapidly enough to keep pace with the death rate. Just what factors are important in killing the roots?

Some of the research at Limoneira definitely shows that overwatering is one process and our experiments lend some weight to that thesis.

Soil Organisms

Since we are plant pathologists we naturally first investigated the microorganisms associated with the injured root system. Two species of brown rot fungi were frequently isolated. Their role in root destruction can readily be demonstrated although, as can be seen presently, their parasitic activity is conditioned by certain chemical and physical factors.

Species of the Fusarium fungi, particularly F. solani, were always present. No experiments thus far have demonstrated that these are of much importance by themselves in killing roots. It is probable, however, that they do aid the brown rot fungi; this has been found to be the case in gummosis. Another fungus, Pythium ultimum, which has habits similar to the brown rot fungi, has been recovered from these roots. In one test it showed no ability to decay roots. Many bacterial forms appear in cultures of root tissues. Preliminary tests have not shown these to be primary parasites. Some species, however, produce products of fermentation in the presence of organic matter and from toxic nitrogen compounds from some sources of nitrogen that are very injurious to the roots of citrus and other plants.

Early in our work with these fungi it became apparent that they were capable of causing an important degree of destruction of the feeder roots only under certain conditions. Infected sour seedlings removed from a heavily infected nursery and placed in earthenware pots in the greenhouse quickly recovered. Placing large amounts of all these fungi in the root zone of 12-year-old navel trees on sweet and sour stock caused no effect that could be detected in the above-ground parts of the trees. In this experiment four different systems of irrigation were used: one set of trees received water every two weeks (called overwatering); another every four weeks (normal watering); and a third set every six weeks (underwatering). Also several trees were basined and watered every two weeks.

The small roots of some of the inoculated trees, particularly those receiving water every two weeks, were not in as good condition as those of the check trees. However, at this date there has been no reflection of this injury in the tops. The soil is Ramona loan and pretty well drained.

Soil Temperatures

The effect of several soil temperatures and a moisture content of field capacity on infection of the roots of sweet and sour seedlings by the fungi was studied in the greenhouse. Infection and destruction of feeders took place at all five temperatures (50° F. to 86° F.), and the brown rot fungi were recoverable from the roots. Nearly all the seedlings died in six months. This suggested the importance of stagnation and lack of drainage.

In order better to observe the results of inoculation and other treatments of roots, seedlings were grown in vaporized nutrient in 10-litre glass battery jars. The liquid was vaporized and recirculated by means of an atomizer connected to an air pressure outlet; thus the roots were kept thoroughly wet and thoroughly aerated at the same time. Under these conditions the roots of citrus were rapidly destroyed by the brown rot fungi and those of avocado by Phytophthora cinnamomi.

These fungi (Phytophthora spp.), while requiring a moist soil for growth and maintenance and liquid water for the distribution of their swimming spores, also require good aeration for their best—that is, their most destructive performance. This suggests that in the orchard the fungi attacked the damaged roots following a period of water-logging, as the water is receding and better aeration is established. There is evidence that the injury suffered by the roots during the immersion and lack of aeration conditions them for infection and destruction by fungi. If the immersion is sufficiently prolonged, suffocation and fermentation or organic matter, particularly the butyric fermentation, destroy the roots. Also many roots may be damaged or killed by toxic concentrations of nitrite produced from nitrates and organic matter under such conditions. If not always actually killed by these factors, the roots at least are rendered more susceptible to fungus attack.

From observation and experiment it seems that the maintenance of a successful citrus orchard would depend on judicious watering—whatever that is—at least endeavoring to

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Marketing Florida Citrus Review Of 1944-45 Season

H. F. WILLSON
Federal-State Market News Bureau

The 1944-45 Florida citrus season had the earliest wind-up of shipping activities in 15 years—or one has to go back to 1929-30 and 1927-28 before finding as early a closing date. Mother Nature had both the first and last words—opening the season with a hurricane and closing it prematurely with a severe drought. The ravaging tropical storm, which swept through the heart of the citrus belt, from the West Coast of Sarasota to Jacksonville on the morning of Oct. 19th (with here-to-fore unexperienced intensity) and dry weather (beginning in November and extending into May) changed Florida's 1944-45 citrus production from a crop approaching the much discussed potential hundred million box figure to a mere seventy and one-half million— or a little more than ten million less than the record breaking production the preceding season. However, despite this small production figure, the highest fresh fruit prices since the late 20's, plus the best cannery prices in the history of the Industry, resulted in an all time record for gross returns. The Industry was favored with seasonal "breaks" in competing sections, had continued unequalled Government demand for wartime requirements and exceptional consumer buying power, which were all potent factors in maintaining prices of both oranges and tangerines at or near ceiling during the entire season, while grapefruit opened and closed strong in fresh fruit channels. The container situation was not nearly so acute as a year ago, there was unlimited tin and labor conditions were more satisfactory. Because of the car shortage, shipping restrictions were necessary from time to time and a number of territorial embargoes were placed in effect for temporary periods to relieve conjestion at receiving points. Some confusion and inconvenience were experienced but, in most instances, these restrictions proved benefical. A shipping holiday, proposed by the joint Growers' Administration and Shippers' Advisory Committees and sponsored generally by Industry at large, practically elinimated the post Christmas and New Year's accumulation of supplies and usual resultant depressed market conditions during early January. Pound selling was given the approval at long last by the Industry and the rapidly increased popularity of the consumer-size packages tended towards more consumption per capita, which is the ultimate aim of successful marketing for the generally predicted heavier production years of the near future. Research activities also began to show results in a big way in the commercial production and merchandising of each new products as citrus jellies, powdered orange juice, frozen concentrates, etc. Improved methods of processing orange juice was accomplishing inestiminable progress in eliminating the big "if" in the ultization of larger orange crops and post-war planning went past the blue print stage with organization of a U. S. Horticultural Committee to re-establish and expand pre-war export business.

The May 1st Government Estimate placed Florida's 1944-45 total orange production at 43,500,000 boxes, all grapefruit (seed and seedless) at 23,100,000 and tangerines at 3,000,000, or a grand total of 70,500,000. For the United States, however, the production of oranges, grapefruit and tangerines, as indicated May 1st, was slightly more than last year—or 164,271,000 boxes compared to 162,635,000 in 1943-44. The most notable increase over previous performance occurred in California Valencias, which were estimated at nearly 38,000,000 boxes compared to approximately 31,000,000 a year ago and about 25,000,000 for the 10-year average 1933-1942). The Texas grapefruit crop was also, again, much heavier—or estimated at 21,800,000 boxes May 1st compared to 17,700,000 the preceding season and a 10-year average of around 10,000,000. Other citrus producing States showed moderate increases, generally, over a year ago. Had Florida not had adverse weather conditions and suffered the heavy storm loss, the potential production of total United States oranges, grapefruit and tangerines would have been close to the two hundred million mark in contrast to around one hundred million box average for the 10-year period (1933-42). At the beginning of the 1944-45 season, Florida was confronted with a crop by far the largest on record. The Government Estimate for October 1944 placed Florida's combined orange, grapefruit and tangerine production at 92,700,000 boxes—or oranges at 52,000,000, all grapefruit at 36,000,000 and tangerines at 4,700,000. Then came the hurricane on Oct. 19th, which over-night changthe prospects, that were further affected by an extended drought a greater part of the season. With the exception of January, when fairly heavy rains were general during the first part of the month, the rainfall throughout the citrus belt from November to May was only a fraction of the average for the past seven years. (Tabulations showing detailed comparisons on rainfall at 23 selected points have been included at the close of this discussion).

Not since 1929-30 has the weighted auction averages of Florida oranges, grapefruit and tangerines been as high as for the 1944-45 season. Through May 18th, the season's average on oranges for all districts was $4.46 a box, all grapefruit $4.23, and tangerines the equivalent of $4.82 for the standard 1-3/5 bu. box, the highest in 15 years. These averages are even more outstanding when one considers that only four years ago, Florida oranges averaged $2.35, which was identical with the 1939-40 season, the year previous; while the seasonal average on grapefruit in 1938-39 and 1940-41 was below $2.00. In this 15-year period, the lowest seasonal average on oranges was $2.09 in 1938-39, considerably less than 1/2 of the 1944-45 aver-

age; and there were eight seasons, when the weighted average was less than $3.00. With grapefruit, during this 15-year period, one finds only three seasons when the average was $3.00 and better; while the tangerine average for seven years was less than $2.50 per standard 1-3/5 bu. box, and one seasonal low was $2.00 in 1938-39. Through May 18, 1945, averages on the 10 auction markets were much higher than a year ago. Oranges topped the 1943-44 season by 57c a box—grapefruit was 10c more or 67c over last year, and tangerines averaged 36c above a year ago on a full box equivalent. The total volume sold at auctions, however, was decidedly less than the year preceding. Through May 18th, Florida auction sales of both oranges and grapefruit totaled approximately 2/3 of the volume in 1943-44 and the season was practically completed. With a larger crop than last year, tangerine auction offerings increased materially over the very light sales of a year ago, or 1,465 cars sold at auction in 1944-45 compared to 644 in 1943-44. When compared with other seasons, however, during the past 15 years, the 1944-45 tangerine auction offerings were relatively light and further emphasizes the wide tangerine distribution of the last three seasons. Florida grapefruit offerings at auction in 1944-45 were the lowest in volume on record for the past 20 years—or only 3,032 cars in contrast to an average of 7,902 cars beginning in 1925-26. During 1944-45, the Indian River Section accounted for considerably more than 1/2 of the seed offerings or 375 cars compared to 300 from the Interior; while seedless offerings from Indian River more than doubled those of Interior, or totaled 1,636 in contrast to 721. Offerings of Florida oranges were relatively light, with the Indian River volume 26.3 per cent of the total—or 2,273 cars compared to Interior's 66,366 cars. The Texas grapefruit volume to Eastern auction increased materially. In New York City, Texas grapefruit sold at auction more than doubled that of 1934-44, while Philadelphia and Pittsburgh showed a 50 per cent increase. Total offerings of Texas grapefruit amounted to 1,936 cars compared to 1,651 a year ago. Through May 19th, 1945, Florida's combined shipments of oranges, grapefruit and tangerines (rail and truck), with the proper proportion of "mixed" cars, totaled approximately 21,000 cars less than for the final 1943-44 season—or 74,527 cars compared to 95,512, and the 1944-45 season was practically over. Total shipments of oranges, through May 19th, were around 15,000 cars under the final last year, or 53,807 cars contrasted to 68,650; while the difference in the grapefruit movement through same date was about 1/3 less, or only 12,891 cars compared to 9,499 a year ago. Florida tangerines were the exception in 1944-45, with heavier shipments than the preceding year, or 7,289 cars in contrast to 7,363.

Supported by continued unequalled Government purchases of nearly the equivalent of fifteen million cases, Florida canners used almost as much volume of combined oranges and grapefruit as a year ago. For the second consecutive year, th canning industry activity, competed with fresh fruit buyers for it's share of the State's orange crop and more than once, during the 1944-45 season, the consistently strong juice price helped the fresh orange market when the going wasn't too good. Florida grapefruit was a cannery proposition from the middle of November on. As soon as

PUMPS PIPE

IRRIGATION SUPPLIES
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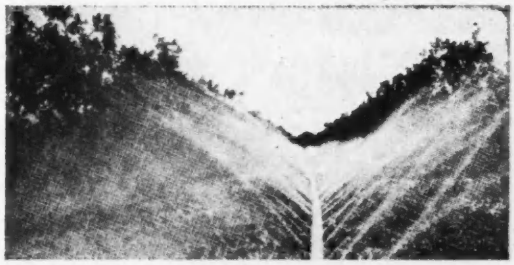

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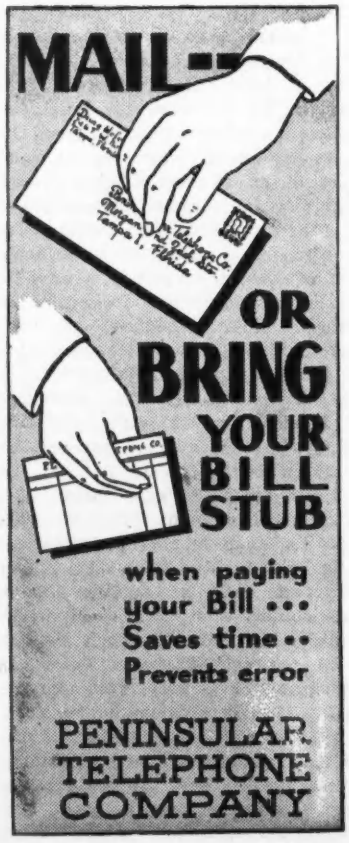
the season got under way, the delivered grapefruit price never did drop below the subsidy price of $1.84 and, beginning around the middle of January and throughout February and March, the price ranged from $1.84 to $2.25 with a prevailing price of $2.25 during April and May. The pack was exceedingly heavy during the first part of the season. By Jan. 1st, both the orange and grapefruit pack were three times greater than at the same date a year ago. As early as Feb. 1st, the weekly utilization of grapefruit commenced a decline which continued for the remainder of the season—the fruit wasn't available because grapefruit suffered the heaviest storm loss. This trend was in direct contrast to last year, when for five consecutive weeks, beginning the third week in January, the utilization was over a million boxes weekly. Cannery oranges, on the other hand, hit peak the first part of March, with two weeks exceeding the eight hundred thousand box total and there were nine consecutive weeks which averaged better than seven hundred thousand boxes weekly, beginning with the week ending Feb. 17th. Starting with a State crop of about two and one-half million less boxes of oranges and eight million less boxes of grapefruit, the Canning Industry will, at the close of the season, account for more than twenty nine million boxes of the seventy and one-half million box total (including tangerines)—or over 40 per cent. Beginning with 1936-37—the canners accounted for approximately 3 percent of Florida's orange crop. For the next two seasons, the percentage didn't vary much—being 5 per cent in 1937-38 and 4 per cent in 1938-39. From 1939-40 through 1942-43, or only two years ago, the range was 14-17 per cent. In 1943-44, the percentage was 24 and for the 1944-45 season nearly 1/3. Grapefruit, during the same periods, started off with better than 1/3 of the crop, or 37 per cent in 1936-37, and has increased the proportion to the 1944-45 season, when the percentage will equal approximately 65 in comparison with 66 per cent in 1943-44 and 64 per cent in 1942-43.

Oranges

The Florida orange season started unusually early, with a relatively heavy volume. During the second week in October, more than 1,000 cars of oranges by rail and truck (including the proper proportion of "mixed") were shipped; while a year ago, or in 1943-44, Florida's orange shipments did not exceed 1,000 cars weekly until the first week in November. For the week of the hurricane and the two weeks following, the movement was relatively light. Grade interpretations which were strictly adhered too, all but eliminated shipments from the heavily storm damaged sections, or until the first part of November. It was not until the second week in November that Florida again reached volume movement and, by this time, the decline in California shipments had dropped to a record low of less than 100 straight cars of oranges for the last three weeks in November. During these same three weeks, the preceding year, California shipped 1,367 cars and two years ago 1,294. This extremely light movement from California left a wide open orange market for Florida. F.o.b. prices were all at full ceiling, or $3.45 up to the change Nov. 6th. When this ceiling change was made, prices advanced to $3.75 on preferred sizes, or 216s and larger. Small sizes were discounted rather heavily and mainifests, at this time, were peaking on 216s—with 56.8 per cent 216s and smaller. Considerable difficulty was experienced coloring fruit. Quality and condition, following the storm, were variable and there were numerous complaints at receiving points. The market took a sharp dip during the weeks ending Nov. 18th and Nov. 25th. F.o.b. prices dropped to a top of mostly $3.00, few $3.25 on preferred sizes. A "red hot" tangerine market, during this period, helped materially. Shippers turned to tangerines and "mixed" car volume increased sharply. With the lighter volume of orange shipments, track holdings in 16 cities continued to drop and reached a new low of 77 cars on Nov. 30th and 97 cars Dec. 1st. As supplies diminished oranges took a turn for the better. Improved quality and real cool weather aided considerably. For the week ending Dec. 2nd, the f. o.b. price was up 25c. A consistent advance followed until, by the week ending Dec. 23rd, the f. o. b. price on Interior fruit was mostly $3.75 with an occasional sale at ceiling, or $3.90. Competitively speaking, California didn't get under way again until the week of Dec. 2nd and then with only 541 straight cars. Throughout December, California averaged slightly better than 1,000 cars a week. With practically a bare orange market from the Pacific Coast east, California had no appreciable supplies on the eastern markets even for the Christmas trade. For the weeks of Nov. 24th and Dec. 1st, California didn't sell a car on the 10 auctions. One lone car was sold during the week ending Dec 8th—24 cars, Dec. 15th and 69 for the week Dec. 22nd. For two weeks just prior to Christmas, a year ago, California had 194 and 199 cars respectively on the 10 auctions. During the week ending Dec. 22nd, a shortage of reefers caused some concern. Many had to switch to "vent" and "box" cars, but the weather was favorable, which helped to relieve the situation. Florida shipments for the two weeks just before Christmas were unusually heavy, but with the very good demand and light terminal holdings, the markets were able to absorb the increased offerings to a degree beyond expectations. In the meantime, canners were quite active. Volume output started early and during December was around 300,000 boxes per week. Delivered juice price the last of November and throughout December was mostly



around $2.00 with some low as $1.75-1.85. Christmas week, fresh shipments were light on account of the shipping holiday. There was no undue accumulation of supplies during the immediate post-holiday period. On Jan. 1st, f. o. b. ceiling prices were dropped to $3.60 and for the first two weeks in January, best quality fruit, 250s and larger, sold at ceiling. Movement was moderate with general rains over the citrus belt aiding in keeping shipments down. During the last two weeks of January, unfavorable weather conditions at northern receiving points in the East, together with liberal supplies of California Navals running heavy to small sizes, took the edge off the market and prices declined 25-23c.

California's heaviest weekly auction offerings of the season occurred in the week ending Jan. 19th with 337 cars offered on the 10 auctions. Auction averages declined $1.25 per box on California stock from the price before Christmas, while Florida's auction drop on Interior fruit, for the same time, was approximately 50c. On Jan. 23rd, 12:01 A. M., the first of a number of embargoes was placed in effect, and Florida's f. o. b. orange market was at it's lowest point during the period January to May, inclusive. Truck holdings in 16 cities had reached a total of 468 cars of oranges, the highest for the season. Within 10 days after the Jan. 23rd embargo went into effect, truck holdings declined to 158 cars and the f. o. b. market had advanced 35c with all sales at ceiling. The first embargo of 5-days duration was superseded by a second, which extended the period to a full week's duration. Three days after the second embargo ended, or on Feb. 3rd, a third went into effect for a 4-day period. Throughout January, there was a consistently advancing cannery market, which also helped fresh fruit prices. By the close of the month, the juice price was mostly $2.30-2.40 delivered. The cannery pack, during February, increased weekly to reach an all time high of approximately 800,000 boxes of oranges per week, beginning the last week in February and including the first two in March. Accompanying this unprecedented heavy volume, the cannery price advanced to $2.70-2.75 by the week ending March 17th. An accumulation of supplies, both fruits and vegetables, at Jersey City in late February and early March had the New York Trade and Florida shippers much concerned, but prompt industry action relieved this situation. During February and March, the weekly movement of fresh oranges was maintained consistently around 2,000 cars per week. During the first part of March, in particular, the "reefer" shortage made it necessary to place car restrictions as to territory. At one time, no reefers were permitted to be used for any citrus with the exception of tangerines and temple oranges to specified territory. These car restrictions were lifted in part Mar. 19th, with final concessions to southern territory Apr. 4th. On Mar. 1st, the fresh orange ceiling was changed to $3.75. During the first part of the month, interior f. o. b. prices were generally $3.60-3.75, but by the last of March, prices ranged from f. o. b. ceiling to delivered ceiling. The orange market was "hot" and continued so to the end of the season. Large operators began contracting for supplies at delivered ceiling. The proportion of cars at delivered ceiling continued to increase until by the latter part of April, all sales were on this basis, and remained so until the close, where again it was a question of pro-rating available supplies to preferred customers. The cannery market also advanced. During April, the delivered price was mostly $3.10-3.25.

Grapefruit

In fresh fruit channels, Florida was most fortunate in the early maturity of the 1944-45 grapefruit crop and the subsequent opportunity for nation-wide distribution prior to the opening of the Texas season. There was a period of around three weeks, when Florida had an "exclusive" on the grapefruit market, with better than 1/3 of the shipments destined to western points. These ideal conditions were of short duration, however, since Texas made the first shipments of the season Oct. 11th and rapidly increased the movement to 185 cars on Monday, Oct. 16th. This was Florida's last chance to get into mid-western territory in any appreciable volume. Texas had a very large crop and volume shipments continued much later in the season than Florida's which in itself was unusual. Fresh shipments from Florida were only about 2/3 of the volume of a year ago, while Texas shipments increased more than 1/3 over the preceding season. There was a wide differen-

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tial between Florida and Texas prices—the latter relatively low. From a fresh ceiling standpoint, Florida grapefruit wasn't in the same class with oranges and tangerines. At the beginning of the season, sales were at ceiling, or $2.51 f. o. b. Due to the extremely heavy storm loss, the adjustment of grapefruit ceilings was considerably higher than for oranges or tangerines. Following the hurricane, the ceiling was raised to $3.32 on white grapefruit and continued until Jan. 1st. During November and December, there was comparatively light movement of Florida stock at prices slightly above the old ceiling, but far below the new levels or generally at $2.60-2.75 f. o. b. on interior fruit. These prices held through January but, beginning in February, advanced and, by the end of the month, ranged mostly from $3.00-3.06, or the new ceiling which was in effect during January and February. On Mar. 1st, the ceiling was again changed or placed at $3.36. By the middle of March, prices had advanced to this new level and, during the first week in April, there was an occasional sale at delivered ceiling. The proportion of delivered sales increased rapidly and, by the end of April all sales were on delivered basis, which held until the close of the season. Florida grapefruit, however particularly interior stock, continued largely a canery propostion with fresh fruit activity decidedly in the background. During the 1944-45 season, the cannery market was strong from start to finish. Prices were at the delivered ceiling of $1.84 per box or higher during the entire season, with the exception of the first two weeks of the season. Beginning with the week ending Nov. 18th and continuing through the first week in January, the prevailing cannery price was $1.84. Effective the second week in January and for the next two months, the market was strong with prices advancing to the general range of $2.10-2.25 throughout March. During April and May, the prevailing price was $2.25. As to volume, the Florida canners started with a utilization of around 200,000 boxes for the last week in October and consistently increased this amount until the second week in December, when they accounted for well over one million boxes. The output decreased slightly over the Christmas holidays, but exceeded the million box mark for the third and fourth week in January. Beginning with the week ending Feb. 3rd, there was a gradual decline for the remainder of the season, with the volume for the week of May 12th down to 68,089 boxes.

Tangerines

In keeping with the earlier seasonal trend of oranges and grapefruit, tangerines started with a volume movement the week ending Nov. 11th. Most fruit packed, at this time, originated in sections not so hard hit by the storm. There was an exceptionally good demand and many shippers began tangerine operations to fill in during the dull orange period the latter part of the month. "Mixed" car shipments increased sharply over-night, with tangerines accounting for a 26.3 percentage in the average "mixed" load for the week ending Nov. 18th. Up until the first part of December, operafors had difficulty obtaining satisfactory color. There was also the problem of storm bruised fruit with insufficient cool weather to toughen the peel. Better weather conditions in early December stepped up the quality considerably and, for a time, it seemed as if too many shippers had switched to tangerines. An improved orange demand, however, slowed down tangerine activities somewhat as operators turned to oranges, although pickings held relatively heavy almost to Christmas. Movement, during the shipping holiday between Christmas and New Year, was light but picked up appreciably the first week in January. The peak week of the season was the one ending Dec. 16th with 967 cars shipped and was closely followed the next week with 910 cars. During the first three weeks in January, shipments ranged from 500 to 600 cars per week, but an abrupt decline began in the week ending Jen. 27th. By the last week in February, shipments had dropped below 100 cars a week. Tangerines opened the season at ceiling and, although there was a wide range in prices at times, generally sales on best stock stayed at ceiling until the close. As often occurs towards the end of a season, when there is variable quality, f. o. b. sales declined, but sound fruit on arrival sold at ceiling. Many shippers preferred to grade closely and roll to auction or for delivered sale rather than accept the prevailing f. o. b. prices. Tangerines, for the first time in a number of seasons, were used in a limited way by canners—or a total of 2,728 boxes were utilized during February.

CITRUS PROCESSING TESTS UNDERWAY

(Continued from page 3)

should start to appear within a relatively short time but conclusive results will probably take upwards of a year, with a final shelf life test taking somewhat more time or until the last specimen finally breaks down.

The bacteriologist with the research staff, has a complete scientific laboratory and in making bacteria counts and tests of each batch of fruit before, during and after processing.

It has long been a scientific contention that bacteria and organisms not killed in sterilization or pasteurization cause the processed citrus juices to lose taste, flavor, color and other properties and these continuing tests are designed to determine how best to inactivate them.

The tangerine juice tests should show conclusive results in time to allow its processing in the coming season if a satisfactory process can be found with the fruit available yet this season, it was said. This, too, will be made available to the industry generally.

Save sirup from canned fruits to sweeten other fruits, sauces or beverages.

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A PROGRESS REPORT ON CIRRUS TREE DECLINE

(Continued from page 7)

avoid long periods of sogginess in the soil, and on the application of the required amount of nitrogen, probably not in one application but in the thorough distribution of small amounts several times during the year—possibly in the irrigation water near the end of the irrigation period, so as to keep the chemical in the root zone. Under such conditions the destruction of feeder roots should be at a minimum and the abundant generation of new roots maintain the tree in health and growth.

Drainage

The importance of drainage and its bearing on fertilization were well illustrated in an experiment where several varieties of citrus seedlings and an avocado seedling were grown in 30 gallon garbage cans, with and without drainage. To 6 of the cans were added daily a dilute solution of a mixture of nitrate and a dilute sugar solution. Three of the cans were provided with drainage and three were not. As checks two cans received nitrate only; two received sugar only; and two water only, each pair with and without drainage. Within a week the nondrained cultures receiving nitrate and sugar showed definite symptoms of injury and all were dead within three weeks; whereas those that were drained maintained a good appearance and have thrived now for a period of two years. In fact, none of the six drained plants, although they were kept very moist continuously, showed any adverse effect except that the one receiving sugar became chlorotic, due probably to the competition of the soil organisms for nitrogen. The plants in the nondrained culture receiving sugar were dead within a period of six weeks, and the nondrained nitrate and water cultures maintained themselves 14 months. The order in which the plants succumbed was as follows: avocado, lemon and Tresca shad dock, rough lemon and sour orange, Royal grapefruit, Valencia, Windsor grapefruit, Sampson tangelo, and a seedling grapefruit.

The importance of carbohydrate fermentation and waterlogging in the destruction of avocado roots will be brought out.

Nitrites

We have not lost sight of the possible importance of nitrites to the health of citrus trees. Mr. Foote has found that these chemicals may be formed abundantly from urea. Nitrites in damaging concentrations can be formed from urea and ammonium compounds, even in a sandy soil low in organic matter. Dr. Sokoloff and I previously reported on the production of these toxic nitrogen compounds from nitrates and organic matter.

In our cooperative experiments we have used the following materials as soil treatments with the purpose in mind of absorbing or destroying possible toxins and discouraging parasitic organisms. (Some of the materials in a watery suspension or in solution were injected into the soil in an attempt to impregnate the whole root zone). Fuller's earth, ferrous sulphate and sulphur, tetrachlorquinone, DD, trichlorbenzene, copper sulfate, bordeaux mixture, zinc-sulfate-lime, yeast, peat, triple superphosphate, Tracel, chlorinated lime, and carbon black were used. In these soil treatments the iron sulphate-sulpher and Fuller's earth were the only materials which have induced a stimulation of root growth. The rootstocks and trunks of some of the experimental trees were injected with five vitamins and five hormones. None of the vitamins has thus far induced a measurable response but the root hormones have in several instances induced a definite improvement in the trees. Other chemicals injected into the trees are 8-hydroxy quinolin benzoate and 8-hydroxy quinolin sulfate, sulfanilamid, solube starch, sucorse, dextrose, dithane, nutrients, and urea. None of these to date has given favorable responses.

Resistance to Decay

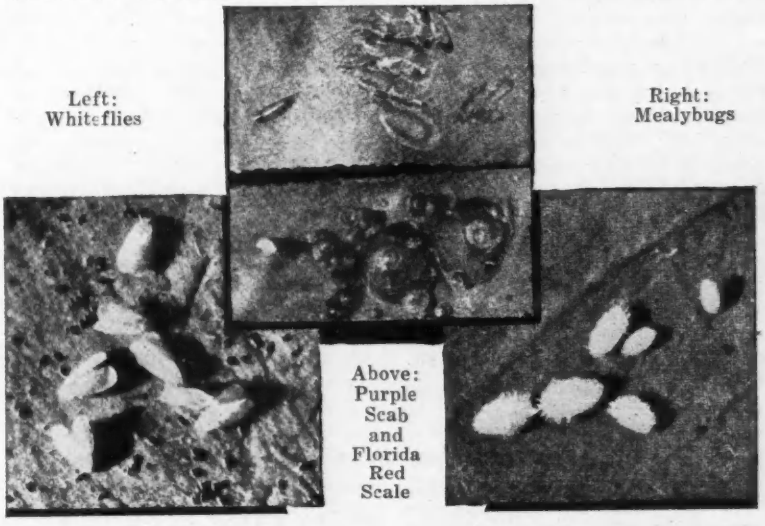
On the basis of our tests this year, the resistance of fibrous roots to decay by the brown rot fungi stand in this order:

Sampson tangelo, Sour orange, lemon, grapefruit, rough lemon, and Valencia.

You will recall that the resistance of standard stocks to gummosis stand in this order:

Sour orange, Sampson tangelo,

(Continued on page 15)



Left: Whiteflies

Right: Mealybugs

Above: Purple Scab and Florida Red Scale

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Some Fallacies About Insects And Insect Control

A, N, TISSOT
Associate Entomologist, Florida Experiment Station

Dragonfiles do not feed snakes and neither do they take care of snakes when they are ill; but the names "snake-feeder" and "snake-doctor" which are sometimes applied to these graceful, strong flying insects indicate that they were formerly supposed to do so. Human beings have always been prone to fear things that they do not understant and these fears have often brought forth fantastic beliefs about some perfectly harmless creatures. Because there is such a diversity of insect life it is only natural that there are many superstitions and erroneous ideas regarding insects. The origins of many of these beliefs are lost in antiquity but it is interesting to surmise as to how they may have arisen.

The association of dragonflies and snakes is rather hard to understand but we know that dragonflies frefrequently fly over a regular course and that they alight on certain objects each time they pass. Perhaps some long forgotten fisherman along an ancient stream changed chanced to see a roving dragonfly alighting on the head of a water-snake basking on a log in the sunshine. The man himself was no doubt very much afraid of the snake and when he saw the insect resting on its head without being harmed, imagined that the dragonfly was in some way ministering to the serpent.

The earwigs are another group of insects about which several fallacies or superstitutions have arisen. An early idea regarding these insects is that they sometimes enter the ears of sleeping human beings and keep crawling inward until they penetrate the brain. Another idea is that they pierce the ears of sleeping persons. Earwigs are active principally at night and they are always seeking small passages in which to hide, so it seems entirely possible that they might enter the ears of persons sleeping out of doors or in poorly constructed habitations. However, earwigs are hardly more likely to thus enter ears than are other nocturnal crawling insects and they certainly would not penetrate the brain f the sleeper. The idea that earwigs pierce the ears no doubt is due to the fact that the forceps on the end of the body are remarkably similar in appearance to the pincers used to pierce the lobes of human ears for the insertion of earrings.

The "death-watch" is another widespread superstittion relating to insects. The regular tapping or clicking sounds produced by certain insects during the quiet of night were long believed to foretell the death of some occupant of the house. The tappings were popularly supposed to be made by "hook lice" or psocids but in reality they were generally produced by small wood-eating beetles, boring in the timbers of the house. Instead of foretelling the destruction of someone dwelling in the house, the "death-watches" actually were announcing the slow but sure destruction of the house itself. The idea that "death-watches" portended death probably arose because the tappings were most often noticed in the quiet of night, by persons watching at the bedside of someone who was dangerously ill.

Because there are such widespread misconceptions concerning insects, it almost inevitably follows that there are many erroneous ideas regarding insect control. Perhaps the greatest fallacy, and certainly the most widespread, is the common habit of attributing to insects, traits and characteristics which we ourselves possess. On the basis of this idea it is assumed that things which taste good to us or have pleasant smell will also be agreeable to insects and that things which are disagreeable or harmful to us will affect insects in a similar manner. Very frequently this is far from being true and some things which are most unpleasant or even repulsive to us are much relished by certain insects. This wrong idea of likes and dislikes has led to the use of all sorts of materials as insecticides, though a great many of them have no insecticidal value whatever. Flour, road-dust, lamp black, alcohol, red pepper, salt, and lime have all been used as insecticides from time to time. It is true that strong alcohol rather quickly kills insects which are placed in it but it is of no value for controlling insects on plants. As for red pepper, there are certain insects which commonly and normally feed and thrive upon it.

The persons who recommend these worthless things do not often knowingly try to deceive. More often than not they have tried the remedies themselves, apparently with good results. At first thought this may seem rather contradictory but actually the explanation is quite

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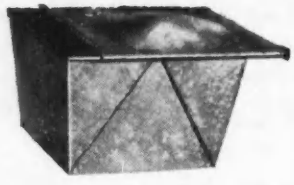

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simple. It is well known that there are many natural factors which tend to hold insects in check and some of these are capable of destroying large numbers of insects in a remarkably short time. A heavy beating rain may destroy thousands of insects in a few minutes. A period of damp rainy weather may favor the growth of certain parasitic fungi which then proceed to wipe out other insect hordes. If some worthless material of supposed insecticidal value happens to be applied shortly before one of these natural catastrophes, the person using it may believe that the treatment was responsible for the disappearance of the insect pests, though actually they would have vanished just as surely if nothing had been done. A change from one stage of the insect life cycle to another, likewise, may lead one to draw the wrong conclusion. For example, let us suppose that a certain crop is infested with caterpillars, which, when fully grown, crawl into the soil to pupate or go into the resting stage. Let us further suppose that the plants are dusted or sprayed with flour or other harmless material about the time the caterpillars reach maturity. When the plants are checked a few days later they are found to be free of the insects and it could easily be assumed that the treatment was responsible for their disappearance, though actually the treatment had nothing whatever to do with it.

Another very common fallacy regarding insects is the idea that most insects are pests. In truth only a very small part of them are in any way destructive. More than 650,000 species of insects are known and probably less than 10,000 species are injurious. It is estimated that about 500 species may be considered as pests in this country and this represents perhaps less than one-half of one percent of all the species actually found here.

In conclusion it may be well to give warning that we cannot believe all that we hear about insects and that we cannot always depend upon what we think we see, for sometimes the actual facts are hidden, and things are not what they seem.

Save sirup from canned fruits to sweeten other fruits, sauces or beverages.

A PROGRESS REPORT ON CITRUS TREE DECLINE

(Continued from page 13)

sweet, orange, rough lemon, grapefruit, lemon, citranges.

Resistance of seedlings to nitrite injury showed this order, highest to lowest:

Sweet lemon, pink shaddock, Seminole tangerine, Troyer citrange, Trifoliate, Paraguay sour, Homosassa sweet, Clementine mandarin.

The order of resistance of lemon to slow decline, as reported by Dr. Batchelor and Mr. Rounds, is Sampson tangelo, sweet orange, Mandarin orange, grapefruit, rough lemon, sour orange.

In conclusion let me say that Dr. Zentmyer and I are continuing our laboratory, greenhouse, and lathhouse tests and our cooperative experiments in eight different citrus orchards and five avocado orchards. The encouragement and help of the Lemon Men's Club in this project have been much appreciated.

Eletricity has been installed recentely in 15 rural Negro houses in Putnam County, according to Lu Ella G. Gamble, Negro home agent.

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Reports Of Our Field Men . . .

POLK COUNTY
J. M. (Jim) Sample

As of this writing, June 19th, we have had a few scattered showers, but as yet no heavy general rains which are badly needed at this time. In many cases where showers occurred following irrigation, trees have bloomed heavily, and with rain, should set a good crop of June bloom. However, on groves that have been seriously dehabilitated by the drought it is still questionable as to just how much of this June bloom will actually set. The summer application of fertilizer has now been completely applied but the spray program is still pretty much upset due to dought conditions. Referring mainly to the oil spray on dought stricken groves it seems best to wait until these groves bloom and set whatever crop of fruit they may have before proceeding with the oil spray. On irrigated groves of course the spray program is going along according to schedule. Our crop of early bloom fruit for next year is definitely going to be short but with heavy June bloom coming the total crop will not be anywhere as short as first anticipated.

NORTH CENTRAL FLORIDA
V. E. (Val) Bourland

We have had some very general rains throughout this territory and groves have certainly made a very fine response. We are getting a good June bloom on most all varieties and this late bloom if properly set will mean the difference between a very light crop and what might be an almost normal crop. There are a large number of groves that had absolutely no fruit remaining on the trees from the early bloom. Most growers are now through with their summer application of fertilizer and are now busy with their spray program. In many instances the post bloom copper spray was passed up and the groves are now being sprayed with oil. Many growers are planning to come back with zinc in their later lime-sulphur sprays. There has been a large acreage of new plantings of citrus trees throughout this territory and a large percentage of the acreage will be to early oranges. There is very little grapefruit being set.

WEST CENTRAL FLORIDA
E. A. (Mac) McCartney

It seems that we will never be able to report that we have had heavy general rains, but as of this writing I am glad to report that the situation is much better than reported last month for we have had some rain and groves are looking much better. In other localities it is still dry and groves are in a definite wilt. Where we have had rain we are getting a very prolific June bloom and it appears that this bloom will set if we can get some heavy rain. This drought has made growers throughout this territory irrigation minded and a number of growers will install irrigation systems during the summer to prevent the heavy droppage of fruit that would occur with a recurrence of a similar drought in future years. The Brooksville C.G.A. have one of our Lyonizer fertilizer spreaders and have been very pleased with the performance of this machine. With the labor shortage being what it is these people report that they could not have accomplished what they have without the machine. Further they claim that they have had a remarkable job of distribution with this piece of equipment.

SOUTHWEST FLORIDA
F. W. (Felton) Scott

During the latter part of June we had some very nice rains that have been so badly needed on grove property throughout this territory. Our first fruit crop will be light for the coming season as we are getting very little late bloom and in many cases where the trees had suffered heavy damage from the drought it is very doubtful if the trees will be able to set what bloom we do get. The spray program is going forward at this time and many growers are passing up their copper sprays and are now applying oil. Vegetable growers have closed their season with most of them making money in spite of the many hazards that they had to contend with during the season. A number of growers are now clearing new land for the approaching fall season and from all information that we can get it now appears that we will have a normal acreage planted this fall. There will be quite a diversification of crops planted this fall which should work to the advantage of all producers.

HILLSBOROUGH & PINELLAS COUNTIES
C. S. (Charlie) Little

This territory has been blessed with some rain during the latter part of June and groves in general have shown a remarkable response to this moisture by putting on a late bloom. It is still questionable as to how much of this bloom will set but if rains will continue it is the general opinion that we should have a good set and this will mean a great deal to practically every grower for it is very definite that our crop of early bloom is extremely light on all varieties. We are having quite a build up of scale in this section and growers are busy with their oil spray. Past experiences have provided many growers with the knowledge that scale insects can do great damage unless controlled in the early stages. Further, most growers are trying to get their oil applied early in an effort to have early bloom fruit pass the required maturity laws as quickly as possible. We have a quite general job of pruning to do this summer and while this work has been somewhat delayed because of the drought it is now getting under way and considerable work will be furnished to season workers during the summer months.

LYONS FERTILIZER COMPANY FIELD MEN ARE ALWAYS GLAD TO BE OF SERVICE TO YOU.

Shore does beat all what a little time will do in changin' a feller's outlook on life. Now, last month fer instance, we'd just all but concluded that the world had gone plumb to the devil and that there wasn't goin' to be enough citrus fruit produced in Florida this year to make a prohibition highball . . . but now everything looks different. The summer rains have started . . . in fact the one that accompanied the storm a few days ago just about took up the slack fer several months . . . and the trees are beginning to look green and healthy and we're gettin' a lot of nice bloom which looks like it might set and make good fruit . . . in addition to which they's a lot more early bloom fruit than we thought at first—which all goes to show what time and a little water kin do.

Science, too, is a wonderful thing. We're speakin' mostly right now of what's been developed to take care of the terrible potato blight which used to just plain wreck a lot of potato growers. Seems like the stuff appeared on leaves in sort of brown spots which they said was a fungus that lived in the infected taters over winter and then when they were planted and sprouted next spring whole fields were just wiped out in ten days when the weather was damp. Not only that the stuff was carried by the wind to other fields maybe miles away and there just wasn't any end to the damage it would do. Well now it seems that a firm called Rhom & Hass, Co., in Philadelphia has invented somethin' that when it's mixed with lime and zinc sulphate in the right proportions just knocks the stuffin' out of the blight and increases yields to where you can hardly believe it. Many reports say their yields are increased from 60 to 150 bushels per acre, while one plot where the stuff was used they harvested 425 bushels per acre—and that ain't hay. The stuff is called Dithane, and it shore does a job.

"Not since 1929-30 has the weighted auction averages of Florida oranges, grapefruit and tangerines been as high as in the 1944-45 season." This is what we read and we reckon it must be so 'cause through May 18 the season average over the state was $4.46 per box for oranges, $4.23 for grapefruit and $4.82 for tangerines, which was the highest in 15 years. If you want to be technical compare these prices with those of four years ago when oranges averaged $2.35 per box and grapefruit was below $2.00 per box. Durn good year we calls it.

We don't know where to tell you kin git the labor to do it, but they's an all-fired lot of pruning which should be done in nearly everybody's grove and the sooner it's done the better off everybody'll be. Some of this packing house help might be willin' to help out. We recommend that you find some way to do the job as soon as possible.

Uncle Bill

THE CITRUS OUTLOOK — LONG AND SHORT TERM ESTIMATES

(Continued from page 6)

as excessive heat retards growth.

A minimum amount of cultivation is another essential. In orange County, California, the non-cultivated groves are reported as having oranges of larger size than the cultivated groves.

The stock cutter and mower can be used without any harm, but the discing should be very shallow if practiced at all. Supply nitrates where needed, but do not overlook the phosphate, gypsum and sulphur.

If we practice orderly marketing, and we are not hit by some calamity, we fail to see how we can miss having another successful season.

In spite of prolonged dry weather, extensive new plantings of citrus have been made in St. Lucie County during the past few weeks. Much of the new citrus land is equipped for water control, with irrigation and pumping facilities, according to County Agent C. D. Kime.

"FOR EVERYTHING THAT GROWS ON EARTH"

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TEXAS CALCINED MAGNESITE

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A fertilizer material rich in Magnesium for grove, nursery, and farm requirements. Contains an average of 80% Magnesium as Magnesium Oxide — IMMEDIATELY active and available for improving soil pH Value, correcting Magiesium Deficiency, and building up a Magnesium reserve in the soil.

Your Fertilizer Manufacturer Will Supply

TEXAS CALCINED MAGNESITE

in your favorite fertilizer brands at from 2 to 4 units for maintenance depending upon conditions, or will recommend DIRECT APPLICATION for correction of severe Magnesium Deficiency at a rate per acre to suit your particular condition.

"BRONZING" — (Magnesium Deficiency)

of CITRUS TREES and the various symptoms of Magnesium Deficiency in VEGETABLES indicate serious losses in production which you cannot afford to take. The use of TEXAS CALCINED MAGNESITE will pay big dividends in healthy trees and plant condition, increased volume of production, and improved quality of fruits and vegetables.

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FOR SALE— ONE 20-H.P. Farquhar Locomotive Type Boiler in good condition. Garland C. Norris, P. O. Box 692, Lakeland, Florida.

FOR SALE — 35,000 ft. 8-5/8" OD 21.31 L. W. Line Pipe in 40-ft. Lengths P. E. Beveled, used but in excellent condition.
UTILITY & INDUSTRIAL SUPPLY COMPANY
921 East Michigan Ave. Jackson, Mich.

WILL BUD CITRUS on contract, sour or lemon stock. John Grieshop Nursery. San Antonio, Florida.

Will pay $5.00 for a used Citrus BUDDING KNIFE in fair condition. Can also use badly worn budding knives if still serviceable for $2.50. Will buy a number of "Rogue" citrus seedlings from nurserymen, 10 cents per seedling. Must be vigorous variant plants. Donald J. Nicholson, 1224 Palmer St., Orlando, Fla.

CITRUS TREES—Best quality usual varieties on sour orange or rough lemon stock. Robt. P. Thornton, c/o Clay Hill Nurseries Co., Box 2880, Tampa, Florida.

MAINTAINING OUR SERVICE

at pre-war level and giving 100 per cent cooperation to our government — is our war-time aim — We appreciate the loyalty and cooperation of our subscribers in 27 Florida communities.

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